AMENDMENTS TO THE CLAIMS

Please **AMEND** claims 18, 19, 21, 27, 33, 36 as shown below.

The following is a complete list of all claims in this application.

1-17. (Previously Cancelled)

18. (Twice Amended) A carbon foam produced by heating comminuted swelling coal particles under a non-oxidizing atmosphere, the atmosphere having a pressure ranging [up] from about 50 psi to about 500 psi, and [in a pressure controlled mold and under a non-oxidizing atmosphere] to a temperature ranging from about 300°C to about 700°C.

19. (Twice Amended) A method for producing carbon foam, comprising the steps of:

placing comminuted swelling coal particles in a [pressure controlled] mold; and

heating the comminuted swelling coal particles under a non-oxidizing atmosphere, the atmosphere having a pressure ranging [up] from about 50 psi to about 500 psi, and to a temperature ranging from about 300°C to about 700°C, thereby producing carbon foam.

20. (Previously Cancelled)

21. (Amended) A method of making carbon foam, comprising the steps of:

placing coal particles having a free swell index ranging from about 3.5 to about 5 in a [pressure controlled reactor] chamber;

heating the coal particles to a first temperature under a non-oxidizing atmosphere, wherein the pressure of the non-oxidizing atmosphere ranges from about 50 psi to about 500 psi; and

controlling pressure in the [pressure controlled reactor] chamber, wherein the pressure is maintained below about 500 psi[; and]

[heating the coal particles in an inert atmosphere to a first temperature],

wherein the steps of controlling pressure and heating the coal particles produces carbon foam [having a predetermined density].

22. (Previously Added) The method of claim 21, wherein the first temperature is a temperature ranging from about 300°C to about 700°C.

23. (Previously Added) The method of claim 21, further comprising the step of maintaining the pressure of the pressure controlled reactor during heating below about 500 psi.

24. (Previously Added) The method of claim 21, further comprising the step of calcining the carbon foam by heating the carbon foam to a temperature ranging from about 800°C to about 1200°C.

25. (Previously Added) The method of claim 21, further comprising the step of graphitizing the carbon foam by heating the carbon foam to a temperature ranging from about 1700°C to about 3000°C.

26. (Previously Added) The method of claim 21, wherein the coal particles have a size less than about one-fourth of an inch.

27. (Amended) A method of making carbon foam, comprising the steps of:

placing swelling bituminous coal particles in a [pressure controlled reactor] mold;

heating the swelling bituminous coal particles under a non-oxidizing atmosphere to a first temperature; and

controlling pressure of the non-oxidizing atmosphere in the [pressure controlled reactor] mold, wherein the pressure is maintained [below] from about 50 psi to about 500 psi[; and]

[heating the bituminous coal particles in an inert atmosphere to a first temperature],

wherein the steps of controlling pressure and heating the bituminous coal particles produces carbon foam [having a predetermined density].

28. (Previously Added) The method of claim 27, wherein the first temperature is a temperature ranging from about 300°C to about 700°C.

29. (Amended) The method of claim 27, further comprising the step of maintaining the pressure [of the pressure controlled reactor] during heating below about 500 psi.

30. (Previously Added) The method of claim 27, further comprising the step of calcining the carbon foam by heating the carbon foam to a temperature ranging from about 800°C to about 1200°C.

31. (Previously Added) The method of claim 27, further comprising the step of graphitizing the carbon foam by heating the carbon foam to a temperature ranging from about 1700°C to about 3000°C.

32. (Previously Added) The method of claim 27, wherein the coal particles have a size less than about one-fourth of an inch.

33. (Amended) Carbon foam, comprising:

an open-celled structure produced by heating swelling bituminous coal particles in a [pressure controlled reactor] mold above about 300°C, under a non-oxidizing atmosphere, the non-oxidizing atmosphere having [at] a pressure ranging [up] from about 50 psi to about 500 psi, [and under a non-oxidizing atmosphere,] wherein the carbon foam has a density ranging from about 0.1 to about 0.6 g/cm^3.

34. (Previously Added) The carbon foam of claim 33 wherein the carbon foam has a thermal conductivity below about 1 W/m °K.

35. (Previously Added) The carbon foam of claim 33 wherein the carbon foam exhibits pore sizes below about 500 μm.

36. (Amended) Carbon foam, comprising:

an open-celled structure produced by heating coal particles having a free swell index between about 3.5 and about 5 in a [pressure controlled reactor] mold above about 300°C, under a non-oxidizing atmosphere, the non-oxidizing atmosphere having [at] a pressure ranging [up] from about 50 psi to about 500 psi, [and under a non-oxidizing atmosphere,] wherein the carbon foam has a density ranging from about 0.1 to about 0.6 g/cm^3.

37. (Amended) The carbon foam of claim 36 wherein the carbon foam has a thermal conductivity below about 1 W/m °K.

38. (Previously Added) The carbon foam of claim 36 wherein the carbon foam exhibits pore sizes below about 500 μm.